

REMARKS/ARGUMENTS

In the Office action dated October 14, 2003, claims 5, 6, 9 – 15, 19, 20, and 23 – 27 were withdrawn from consideration and claims 1 – 4, 7, 8, 16 – 18, 21, and 22 were rejected. In addition, there were objections to the specification and drawings. In response, Applicants have amended the specification and Figure 1 of the drawings. Applicants hereby request reconsideration of the application in view of the amended specification and drawings and the below-provided remarks.

I. Objections to the Specification

The abstract was objected to because of undue length. The abstract has been amended to less than 150 words. Applicants assert that the amended abstract complies with the requirements of MPEP 608.01(b).

The disclosure was objected to because “On page 17, line 3, ‘Fig. 6’ is used where ‘Fig. 11’ may be intended.” (Office action, page 4, item 7) Applicants have reviewed the cited text and figures and assert that Fig. 6 is correctly identified on page 17, line 3. No amendment has been made.

II. Claim Rejections under 35 U.S.C. 103

Applicants assert that the subject matter of all of the claims was commonly owned at the time of the invention.

Claims 1 – 4, 7 – 8, 16 – 18, and 21 – 22 were rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of Graves et al. (U.S. Pat. No. 6,115,162, hereinafter Graves) and Tolson (U.S. Pat. No. 6,208,850 B1).

A. Independent Claim 1

Claim 1 recites a system for optical heterodyne detection. With regard to claim 1, the Office action states “the admitted prior art discloses an optical heterodyne detection system (Fig. 1) comprising the first optical path, the second optical path, the optical combining means, the third optical path, and the photodetector” and “[t]he admitted prior art does not expressly disclose the optical pre-selector and the means for adjusting said optical pre-selector passband.” The Office action goes on to state

that Graves teaches the “optical pre-selector” and that Tolson teaches the “means for adjusting” as recited in claim 1.

Applicants assert that the cited prior art does not teach or suggest an “optical pre-selector” or a “means for adjusting” as recited in claim 1. Specifically, Applicants assert that the combination of the admitted prior art in view of Graves and Tolson does not teach “an optical pre-selector.....having a passband that tracks the frequency of said swept local oscillator signal.” (emphasis added) Graves is cited simply for the existence of the optical pre-selector. Graves is not cited for teaching an optical pre-selector “having a passband that tracks the frequency of said swept local oscillator signal.” Tolson is cited for teaching the “means for adjusting.” Applicants assert that Tolson teaches an electrical filter whose center frequency is adjusted to match the fixed frequency of a local oscillator signal and not an optical pre-selector “that tracks the frequency of said swept local oscillator signal” as recited in claim 1. At col. 2, lines 26 – 30, Tolson states:

“[t]he action of the phase locked loop is to drive the centre frequency of the passband of filter 3 towards the frequency of the local oscillator, the local oscillator frequency having been set for use with the selected operating channel.” (emphasis added)

That is, the local oscillator frequency is set to a fixed frequency and then the frequency of the electrical filter is locked onto the fixed frequency of the local oscillator. Further at col. 2, lines 39 – 43, Tolson states:

“[t]he phase locked loop does not operate while the sample and hold circuit 13 supplies a fixed voltage to control filter 3. When a different channel is selected the phase locked loop circuit is enabled and the filter is tuned to accept the new channel frequencies.”

That is, the phase locked loop operates only when the local oscillator is switched to a different one of the fixed channels. Nowhere does Tolson teach an optical pre-selector “having a passband that tracks the frequency of said swept local oscillator signal.” Because neither Graves nor Tolson teach or suggest an optical pre-selector “having a passband that tracks the frequency of said swept local oscillator signal” as recited in claim 1, Applicants assert claim 1 is not rendered obvious from the admitted prior art in view of Graves and Tolson.

Additionally, Applicants assert that the combination the admitted prior art in view of Graves and Tolson does not teach the:

“means for adjusting said optical pre-selector passband in response to a measure of the frequency of said swept local oscillator signal and in response to a measure of a portion of said swept local oscillator signal after said portion of said swept local oscillator signal has optically interacted with said optical pre-selector, said optical pre-selector passband being adjusted to track the frequency of said swept local oscillator signal.” (emphasis added)

As stated above, Tolson teaches an electrical system that includes an electrical signal filter. Tolson does not teach or suggest a local oscillator signal that has “optically interacted with said optical pre-selector” as recited in claim 1. Graves is not cited for teaching the “means for adjusting” as recited in claim 1. Because neither Graves nor Tolson teach or suggest the “means for adjusting” as recited in claim 1, Applicants assert claim 1 is not rendered obvious from the admitted prior art in view of Graves and Tolson.

B. Claim 2

Claim 2 depends from claim 1 and recites:

“a phase modulator for modulating at least some portion of said swept local oscillator signal, said phase modulator being responsive to said means for adjusting and being located along an optical path that is before said optical pre-selector.”

With regard to claim 2, the Office action states that “the admitted prior art in view of Graves et al. and Tolson discloses a phase modulator (Tolson, phase change in abstract.)” Applicants assert that claim 2 is not rendered obvious from the admitted prior art in view of Graves and Tolson because neither Graves nor Tolson teach a “phase modulator” as recited in claim 2. The abstract of Tolson teaches that “a phase locked loop uses the phase change imparted by the bandpass filter to local oscillator breakthrough from the mixer for a measure of frequency difference between input RF and local oscillator output.” (emphasis added) While Tolson does refer to a phase change that is imparted by the bandpass filter, Tolson does not teach or suggest a phase modulator. Referring to the only figure in Tolson, there is no phase modulator identified. Additionally, there is no phase modulator identified in the specification of Tolson. Applicants assert that because Tolson does not teach a “phase modulator,”

claim 2 is not rendered obvious from the admitted prior art in view of Graves and Tolson.

With regard to claim 2, the Office action also states in the third sentence of the claim 2 rejection, that it would have been obvious “to modify the phase modulator of the admitted prior art in view of Graves et al. and Tolson.” (emphasis added) Applicants do not know what is meant by the phrase “the phase modulator of the admitted prior art” since a phase modulator has not been identified as admitted prior art. Further clarification of this sentence is requested.

Claims 3, 4, and 7

Claims 3, 4, and 7 are dependent on claim 1. Applicants assert that that claims 3, 4, and 7 are allowable based on an allowable claim 1.

Claim 8

Claim 8 depends from claims 1, 2, and 7. Claim 8 recites:

“means for tapping said portion of said swept local oscillator signal from said second optical path, passing said portion of said swept local oscillator signal through said phase modulator, delaying said portion of said swept local oscillator signal, and interacting said portion of said swept local oscillator signal with said optical pre-selector.”

With regard to claim 8, the Office action states that it would have been obvious to include a tap “to isolate the local oscillator signal to provide more controlled phase modulation” and to include a delay “to provide more precise synchronization for the interacting.” Applicants assert that neither Graves nor Tolson teach or suggest the elements of claim 8.

Claim 16

Claim 16 recites a method for monitoring an optical signal utilizing optical heterodyne detection. The method corresponds to the system recited in claim 1 and therefore, Applicants assert that the remarks provided with regard to claim 1 apply also to claim 16.

Claim 17

Claim 17 corresponds to claim 2. Therefore, Applicants assert that the remarks provided with regard to claim 2 apply also to claim 17.

Claims 18 and 21

Claims 18 and 21 are dependent on claim 16. Applicant asserts that claims 18 and 21 are allowable based on an allowable claim 16.

Claim 22

Claim 22 corresponds to claim 8. Therefore, Applicants assert that the remarks provided with regard to claim 8 apply also to claim 22.

Applicants respectfully request reconsideration of the claims in view of the amendments and remarks made herein.

Respectfully submitted,



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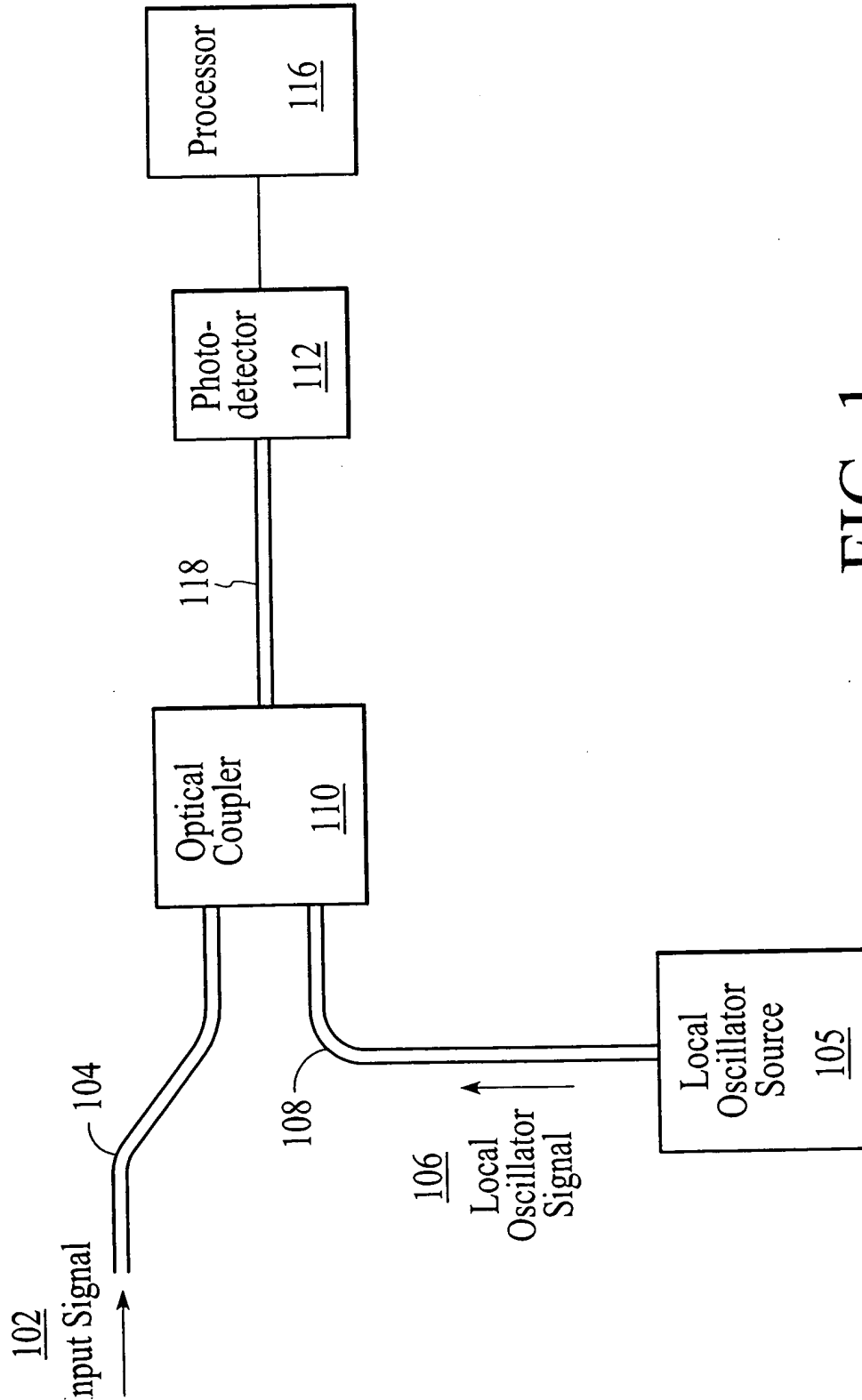


FIG. 1
(PRIOR ART)